



**Female Hairstyle and Flight Helmet Accommodation:  
The AMELIA Project  
Phase I: Survey Study  
Part 2: Survey Responses**

**By**

**B. Joseph McEntire  
Barbara A. Murphy  
Ben T. Mozo**

**Aircrew Protection Division**

**March 1999**

19990406 098

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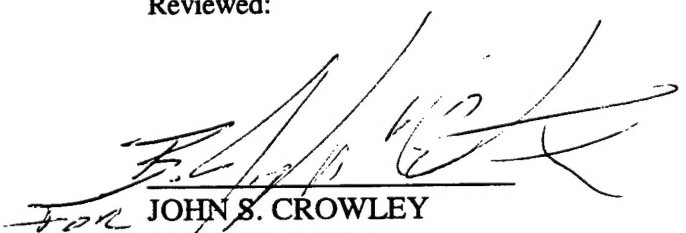
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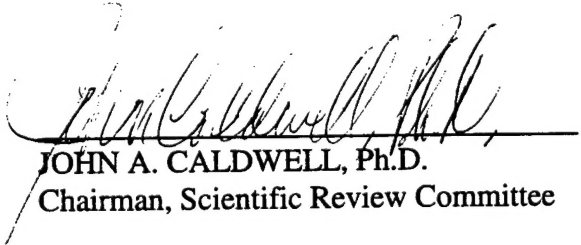
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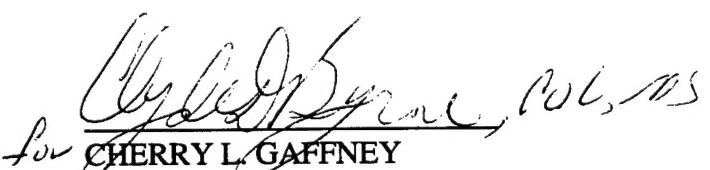
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LTC, MC, MFS  
Director, Aircrew Protection  
Division

  
JOHN A. CALDWELL, Ph.D.  
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## REPORT DOCUMENTATION PAGE

Form Approved  
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1a. REPORT SECURITY CLASSIFICATION Unclassified			1b. RESTRICTIVE MARKINGS		
2a. SECURITY CLASSIFICATION AUTHORITY			3. DISTRIBUTION / AVAILABILITY OF REPORT Approved for public release, distribution unlimited		
2b. DECLASSIFICATION / DOWNGRADING SCHEDULE					
4. PERFORMING ORGANIZATION REPORT NUMBER(S) USAARL Report No. 99-10			5. MONITORING ORGANIZATION REPORT NUMBER(S)		
6a. NAME OF PERFORMING ORGANIZATION U.S. Army Aeromedical Research Laboratory		6b. OFFICE SYMBOL (If applicable) MCMR-UAD	7a. NAME OF MONITORING ORGANIZATION U.S. Army Medical Research and Materiel Command		
6c. ADDRESS (City, State, and ZIP Code) P.O. Box 620577 Fort Rucker, AL 36362-0577			7b. ADDRESS (City, State, and ZIP Code) 504 Scott Street Fort Detrick MD 21702-5012		
8a. NAME OF FUNDING / SPONSORING ORGANIZATION Naval Air Warfare Center		8b. OFFICE SYMBOL (If applicable) Code 6032	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER		
8c. ADDRESS (City, State, and ZIP Code) Warminster, PA 18974-5000			10. SOURCE OF FUNDING NUMBERS		
			PROGRAM ELEMENT NO. 62787A	PROJECT NO. 30162787A878	TASK NO. EA
			WORK UNIT ACCESSION NO. DA302870		
11. TITLE (Include Security Classification) Female Hairstyle & Flight Helmet Accommodation: The AMELIA Project, Ph. I: Survey Study, Part 2: Survey Responses (U)					
12. PERSONAL AUTHOR(S) B. J. McEntire, B. A. Murphy, and B. T. Mozo					
13a. TYPE OF REPORT Final		13b. TIME COVERED FROM TO		14. DATE OF REPORT (Year, Month, Day) 1999 March	
15. PAGE COUNT 76					
16. SUPPLEMENTAL NOTATION					
17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)		
FIELD	GROUP	SUB-GROUP	personal protective equipment, female aviators, female hairstyles, flight helmet performance and safety		
19. ABSTRACT (Continue on reverse if necessary and identify by block number) Most personal protective equipment in current military aviation was designed with male aircrew in mind. To ensure that female aviator performance is not hampered by improperly fitted or sized equipment, the U.S. Navy (USN) established the Aircrew Modified Equipment Leading to Increased Accommodation (AMELIA) program. In this Phase I study, a novel questionnaire was distributed to a variety of USN and U.S. Marine Corps (USMC) aviation installations around the world to assess the effect of female hairstyles on flight helmet performance and safety. One hundred and one completed questionnaires were returned to the U.S. Army Aeromedical Research Laboratory (USAARL) resulting in a response rate of 21-40%. This report (Part 2) contains the raw data of the survey study, while Part 1 comprises the detailed report of the research methods and results.					
20. DISTRIBUTION / AVAILABILITY OF ABSTRACT <input checked="" type="checkbox"/> UNCLASSIFIED/UNLIMITED <input type="checkbox"/> SAME AS RPT. <input type="checkbox"/> DTIC USERS			21. ABSTRACT SECURITY CLASSIFICATION Unclassified		
22a. NAME OF RESPONSIBLE INDIVIDUAL Chief, Science Support Center			22b. TELEPHONE (Include Area Code) (334) 255-6907		22c. OFFICE SYMBOL MCMR-UAX-SI

## Preface

This work was funded by the U.S. Navy under the auspices of the Aircrew Modified Equipment Leading to Increased Accommodation (AMELIA) program. The authors would like to acknowledge Ms. Jean Parker, for her gracious support, consultation, and assistance in formulating the questionnaire; Ms. V. Carol Chancey, for her expertise in database development; and Master Chief Dave Kunkle (USN Ret), for his extensive assistance in distributing and collecting the questionnaires.



## Table of contents

### Page

Preface .....	ii
Table of contents .....	iii
Background to the survey data set.....	1
Survey responses .....	2
Military experience and demographics section .....	2
Helmets section .....	8
Ancillary equipment section.....	15
Hair styles section .....	41
Reference.....	61
Appendix: Female Aircrew Helmet Accommodation Questionnaire.....	A-1

## Background to the survey data set

Recent directives by Congress have increased opportunities for female personnel to occupy aviator and aircrew positions in the military. However, most personal protective equipment (e.g., flight helmets, survival vests, gloves, etc.) in current military use was designed with male aircrew in mind. Since there are considerable differences between male and female anthropometry, significant problems accommodating females in military aviation have become common. To ensure that female aviator performance is not hampered by improperly fitted or sized equipment, the U.S. Navy (USN) established the Aircrew Modified Equipment Leading to Increased Accommodation (AMELIA) program.

A survey study; Phase I of an AMELIA-funded research program, was conducted by the U.S. Army Aeromedical Research Laboratory (USAARL) to study the effects of female anthropometric and hairstyle differences on helmet performance and flight safety. The objective of Phase I was to assess current practices and attitudes of USN and U.S. Marine Corps (USMC) female aircrew.

A novel questionnaire was constructed for this study (Appendix). The questionnaire consists of five general sections: demographics, military experience, helmet usage, ancillary equipment and hairstyles. The "demographic" section collects basic descriptive information, while the "military experience" section focuses on the participants' aviation experience. The "helmet usage" section describes the current helmet use patterns by respondents. In the "ancillary equipment" section, respondents were queried regarding their use of various devices including skull caps, eyeglasses, earplugs, chemical biological respirator (CBR) masks, oxygen masks, night vision goggles (NVGs), and helmet fitting systems. Finally, in the hairstyle section, participants were asked about their flight duty hairstyles, hair conditioning, and styling treatments. This section of the questionnaire was developed with the aid of a professional hair styling expert.

Part I of this report contains the details of the methods, analysis, and results of this survey research (McEntire, Murphy, and Mozo., 1999). The present publication, Part II, contains the data tables necessary to allow close inspection of individual subject responses. Certain data fields have been consolidated or omitted to prevent identification of individual respondents. Questions regarding the dataset may be directed to the Commander, U.S. Army Aeromedical Research Laboratory, ATTN: Mr. B. J. McEntire, Fort Rucker, AL 36362.

## Survey responses

# AMELIA - Phase I (Military Experience and Demographics Section)

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties	Q 2.1 Race	Q 2.2 Age
1	Not included	Not included	Not included	E-2C	60	300	Pilot	Pilot in command, Co-pilot	Not included
2	Not included	Not included	Not included	C-12	120	1350	Pilot	Pilot in command, Co-pilot	Not included
3	Not included	Not included	Not included	C-12		1780	Pilot/ copilot	Pilot in command, Co-pilot	Not included
4	Not included	Not included	Not included	H-53	200	500	Pilot	Pilot in command, Co-pilot	Not included
5	Not included	Not included	Not included				Physiology Technician (Ride low pressure chamber as inside observer) low pressure chbr obsvr	Not included	Not included
6	Not included	Not included	Not included	E-2C	80	330	Pilot	Pilot in command, Co-pilot	Not included
7	Not included	Not included	Not included	AV8B, H-1, H46	600	600	Observer	Observer	Not included
8	Not included	Not included	Not included	E-2C	450	800	Pilot	Pilot in command, Co-pilot	Not included
9	Not included	Not included	Not included	H-3	150	150	Crewchief	Crew chief, Rescue swimmer	Not included
10	Not included	Not included	Not included	C-2	500	2400	Crewchief	Crew chief	Not included
11	Not included	Not included	Not included	C-2		1500	C-12 Aircrew/ C-2 Loadmaster	Crew chief	Not included
12	Not included	Not included	Not included	H-3	800	1000	Pilot	Pilot in command	Not included
13	Not included	Not included	Not included	H-53		350	2/P	Co-pilot	Not included
14	Not included	Not included	Not included	F-14, T-34, E-6, C-130		1480	NAV/ACO - Airborne comm Officer	Navigator/ Mission Commander	Not included



	Q 1.1	Q 1.2	Q 1.4	Q 1.5	Q 1.6	Q 1.7	Q 1.8-1.9	Q 2.1	Q 2.2
ID	MOS	Rank	Squadron/unit	Current aircraft	Flight hours current A/C	Total flight hours	Normal aircrew position and duties	Race	Age
15	Not included	Not included	Not included	H-46	600	1600	Pilot	Pilot in command, Co-pilot	Not included
16	Not included	Not included	Not included	H-46	643			Aircrew	Not included
17	Not included	Not included	Not included	H-46	600	800	Pilot	Pilot in command	Not included
18	Not included	Not included	Not included	H-46	500	850	Pilot	Pilot in command, Co-pilot	Not included
19	Not included	Not included	Not included	H-46	650	850	Pilot	Pilot in command	Not included
20	Not included	Not included	Not included	H-46	600	600	Crewchief/ Vert repCrew chief, Vert-Rep crewman	Not included	Not included
21	Not included	Not included	Not included			4	Student	Other (Student/NFO)	Not included
22	Not included	Not included	Not included	TH-57	6	118	Pilot	Copilot/SNA	Not included
23	Not included	Not included	Not included	T-34	90	90	Student	Ft engineer	Not included
24	Not included	Not included	Not included	TH-57	29	275	Pilot	Other (Student pilot )	Not included
25	Not included	Not included	Not included	T-34	80	80	Student	Other (Student pilot )	Not included
26	Not included	Not included	Not included	T-34		130	SNA	Co-pilot	Not included
27	Not included	Not included	Not included	C-2	25	2000	IFPC	Crew chief	Not included
28	Not included	Not included	Not included	H-46	750	1000	Pilot	Pilot in command	Not included
29	Not included	Not included	Not included	P-3	300	1800	Electronic Warfare	Ft mechanic, Other (Electronic Warfare)	Not included
30	Not included	Not included	Not included	H-53	15	15	SENSE	Other (SENSE)	Not included
31	Not included	Not included	Not included	S-3B	16	16	SENSE	Other (SENSOR Operator)	Not included
32	Not included	Not included	Not included	S-3B	13	13	SENSE	Sonar operator	Not included
33	Not included	Not included	Not included	H-60	200	400	Pilot	Co-pilot	Not included
34	Not included	Not included	Not included	H-60	400	1200	Pilot	Co-pilot	Not included

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties	Q 2.1 Race	Q 2.2 Age
35	Not included	Not included	Not included	H-60	150	350	Pilot Co-pilot, Student (ATO-Tatics)	Not included	Not included
36	Not included	Not included	Not included	T-34	1000	2500	Pilot/AC/IP	Not included	Not included
37	Not included	Not included	Not included	T-34	85	85	Copilot	Not included	Not included
38	Not included	Not included	Not included	TH-57	1200	2450	Pilot	Not included	Not included
39	Not included	Not included	Not included			600	RIO	Not included	Not included
40	Not included	Not included	Not included	S-3B		200	NFO	Not included	Not included
41	Not included	Not included	Not included	H-60	15	300	Pilot	Not included	Not included
42	Not included	Not included	Not included	H-46	600		Crewchief	Not included	Not included
43	Not included	Not included	Not included					Not included	Not included
44	Not included	Not included	Not included	S-3B	70	350	Pilot	Not included	Not included
45	Not included	Not included	Not included	C-2	400	650	Pilot	Not included	Not included
46	Not included	Not included	Not included	HC-11	1	1255	Pilot	Not included	Not included
47	Not included	Not included	Not included	P-3			Student	Not included	Not included
48	Not included	Not included	Not included	P-3	50	50	SS-3	Not included	Not included
49	Not included	Not included	Not included	P-3		200	Pilot	Not included	Not included
50	Not included	Not included	Not included	P-3	16	16	SS-3	Not included	Not included
51	Not included	Not included	Not included	P-3	58	58	SS-3	Not included	Not included
52	Not included	Not included	Not included	P-3	36	280	Pilot	Not included	Not included
53	Not included	Not included	Not included	S-313		650	Copilot	Not included	Not included
54	Not included	Not included	Not included	AVPHYS		200	Observer	Not included	Not included
55	Not included	Not included	Not included	H-46	800	980	Pilot	Not included	Not included

<b>ID</b>	<b>Q 1.1 MOS</b>	<b>Q 1.2 Rank</b>	<b>Q 1.4 Squadron/unit</b>	<b>Q 1.5 Current aircraft</b>	<b>Q 1.6 Flight hours current A/C</b>	<b>Q 1.7 Total flight hours</b>	<b>Q 1.8-1.9 Normal aircrew position and duties</b>	<b>Q 2.1 Race</b>	<b>Q 2.2 Age</b>
56	Not included	Not included	Not included	T-34	1500	3000	Instructor	Not included	Not included
57	Not included	Not included	Not included	T-45	80	160	SNA	Not included	Not included
58	Not included	Not included	Not included				Aviation Preflight Indoctrination	Not included	Not included
59	Not included	Not included	Not included					Not included	Not included
60	Not included	Not included	Not included	T-34	116	116	Other (Student pilot)	Not included	Not included
61	Not included	Not included	Not included	CT-39G	750	1300	Pilot	Not included	Not included
62	Not included	Not included	Not included				Other (Student pilot)	Not included	Not included
63	Not included	Not included	Not included	TH-57	10	120	Student Pilot	Not included	Not included
64	Not included	Not included	Not included					Not included	Not included
65	Not included	Not included	Not included			500	Other (Physiologists)	Not included	Not included
66	Not included	Not included	Not included			450	Pilot in command	Not included	Not included
67	Not included	Not included	Not included	T-34	30	30	SNFO	Not included	Not included
68	Not included	Not included	Not included	T-34	30	30	SNFO	Not included	Not included
69	Not included	Not included	Not included	T-34	20	30	SNFO	Not included	Not included
70	Not included	Not included	Not included	T-34	3	3	SNFO	Not included	Not included
71	Not included	Not included	Not included	T-34	50	120	SNFO	Not included	Not included
72	Not included	Not included	Not included	T-34, T-2	50	50	Student Pilot	Not included	Not included
73	Not included	Not included	Not included	TH-57	150	270	Pilot	Not included	Not included
74	Not included	Not included	Not included	P-3	100	100	Flight Engineer	Not included	Not included
75	Not included	Not included	Not included	H-46	200	500	Pilot	Not included	Not included
76	Not included	Not included	Not included					Not included	Not included
77	Not included	Not included	Not included	H-46	2	200	Pilot	Not included	Not included

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties	Q 2.1 Race	Q 2.2 Age
78	Not included	Not included	Not included	H-60	315	700	Copilot	Not included	Not included
79	Not included	Not included	Not included	H-46	70	300	Copilot	Not included	Not included
80	Not included	Not included	Not included	H-46	24	24	2nd Crewman	Not included	Not included
81	Not included	Not included	Not included	H-46	50	2400	Copilot	Not included	Not included
82	Not included	Not included	Not included	H-46	550	780	Pilot	Not included	Not included
83	Not included	Not included	Not included	H-60	30	300	Pilot	Not included	Not included
84	Not included	Not included	Not included	S-3B			SENSO	Not included	Not included
85	Not included	Not included	Not included	T-34		24	Other (Student pilot)	Not included	Not included
86	Not included	Not included	Not included	P-3		265	Other (Observer)	Not included	Not included
87	Not included	Not included	Not included	T-45	400	1000	Pilot	Not included	Not included
88	Not included	Not included	Not included					Not included	Not included
89	Not included	Not included	Not included	P-3	16	16	Other (EWO)	Not included	Not included
90	Not included	Not included	Not included	T-34	40	40	Other (Student pilot)	Not included	Not included
91	Not included	Not included	Not included	TH-57, T-34	100	100	Pilot	Not included	Not included
92	Not included	Not included	Not included	H-3	1000	1300	Pilot	Not included	Not included
93	Not included	Not included	Not included	P-3	3700	4400	Flight Engineer	Not included	Not included
94	Not included	Not included	Not included	TH-57	6	120	Pilot	Not included	Not included
95	Not included	Not included	Not included	T-34	330	1500	Aircraft Commander	Not included	Not included
96	Not included	Not included	Not included	H-53			AO/AG	Not included	Not included
97	Not included	Not included	Not included	P-3	75	325	Pilot	Not included	Not included
98	Not included	Not included	Not included	H-3	400	600	Crew Chief	Not included	Not included

ID	Q 1.1 MOS	Q 1.2 Rank	Q 1.4 Squadron/unit	Q 1.5 Current aircraft	Q 1.6 Flight hours current A/C	Q 1.7 Total flight hours	Q 1.8-1.9 Normal aircrew position and duties	Q 2.1 Race	Q 2.2 Age
56	Not included	Not included	Not included	T-34	1500	3000	Instructor	Not included	Not included
57	Not included	Not included	Not included	T-45	80	160	SNA	Other (Student pilot)	Not included
58	Not included	Not included	Not included				Aviation Preflight Indoctrination	Not included	Not included
59	Not included	Not included	Not included					Not included	Not included
60	Not included	Not included	Not included	T-34	116	116	Other (Student pilot)	Not included	Not included
61	Not included	Not included	Not included	CT-39G	750	1300	Pilot	Pilot, Co-pilot	Not included
62	Not included	Not included	Not included				Other (Student pilot)	Not included	Not included
63	Not included	Not included	Not included	TH-57	10	120	Student Pilot	Other (Student pilot)	Not included
64	Not included	Not included	Not included					Not included	Not included
65	Not included	Not included	Not included			500	Other (Physiologists)	Not included	Not included
66	Not included	Not included	Not included			450	Pilot	Not included	Not included
67	Not included	Not included	Not included	T-34	30	30	SNFO	Other (Student pilot)	Not included
68	Not included	Not included	Not included	T-34	30	30	SNFO	RIO	Not included
69	Not included	Not included	Not included	T-34	20	30	SNFO	Other (SNFO)	Not included
70	Not included	Not included	Not included	T-34	3	3	SNFO	Other (SNFO)	Not included
71	Not included	Not included	Not included	T-34	50	120	SNFO	Other (SNFO)	Not included
72	Not included	Not included	Not included	T-34, T-2	50	50	Student Pilot	Other (Student pilot)	Not included
73	Not included	Not included	Not included	TH-57	150	270	Pilot	Co-pilot	Not included
74	Not included	Not included	Not included	P-3	100	100	Flight Engineer	Flt engineer	Not included
75	Not included	Not included	Not included	H-46	200	500	Pilot	Flt engineer	Not included
76	Not included	Not included	Not included					Not included	Not included
77	Not included	Not included	Not included	H-46	2	200	Pilot	Co-pilot	Not included

# AMELIA - Phase I (Helmets Section)

ID	Q 3.0 Rotary/Fixed Wing A/C	Q 3.1 Helmet type	Q 3.2a If visor SPH-3C	Q 3.2b Fitting system for SPH-3C	Q 3.3a If visor HGU-33/P	Q 3.3b Fitting system for HGU-33/P	Q 3.4 Fitting sys HGU-55/P
1	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
2	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
3	Fixed	HGU-33/P			Single integrated w/ rigid housing	V-tec liner, chemical poured	
4	Rotary	HGU-84/P					
5	Fixed	HGU-68/P					
6	Fixed	HGU-33/P					
7	Both	HGU-64/P & HGU-33/P	Dual integrated (basic visor system)	V-tec liner, chemical poured	Single integrated w/ rigid housing	Pad fit (basic system)	
8	Fixed	HGU-33/P			Single integrated w/ rigid housing	V-tec liner, chemical poured	
9	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)	Single integrated w/ rigid housing	Pad fit (basic system)	
10	Fixed	HGU-33/P					
11	Fixed	HGU-33/P					
12	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	V-tec liner, chemical poured	Single integrated w/ rigid housing	Pad fit (basic system)	
13	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			
14	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	

<b>ID</b>	<b>Q 3.0 Rotary/Fixed Wing A/C</b>	<b>Q 3.1 Helmet type</b>	<b>Q 3.2a If visor SPH-3C</b>	<b>Q 3.2b Fitting system for SPH-3C</b>	<b>Q 3.3a If visor HGU-33/P</b>	<b>Q 3.3b Fitting system for HGU-33/P</b>	<b>Q 3.4 Fitting sys HGU-55/P</b>
15	Rotary	SPH-3C & HGU-64/P	Single w/ NVG mount	V-tec liner, not chemical poured			
16							
17	Rotary	HGU-84/P					
18	Rotary	HGU-84/P					
19	Rotary	HGU-84/P					
20	Rotary	SPH-3C & HGU-64/P	Single w/ NVG mount	Adjustable sling suspension (basic system)			
21							
22	Rotary	HGU-84/P					
23	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
24	Rotary	HGU-84/P					
25	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
26	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
27							
28	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			
29	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
30	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
31	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	

ID	Q 3.0		Q 3.1	Q 3.2a	Q 3.2b	Q 3.3a	Q 3.3b	Q 3.4
	Rotary/Fixed	Wing A/C	Helmet type	If visor	Fitting system	If visor	Fitting system	Fitting sys
				SPH-3C	for SPH-3C	HGU-33/P	for HGU-33/P	HGU-55/P
32	Fixed		HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
33	Rotary		SPH-3C & HGU-64/P	Dual integrated (basic visor system)	V-tec liner, chemical poured			
34	Rotary		HGU-84/P					
35	Rotary		SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Thermo-plastic liner (TPL)			
36	Fixed		HGU-33/P			Dual integrated with rigid housing	Pad fit (basic system)	
37	Fixed		HGU-33/P			Single snap-on visor	Pad fit (basic system)	
38	Rotary		HGU-67/P					
39								
40	Fixed		HGU-33/P			Dual integrated with rigid housing	Pad fit (basic system)	
41	Rotary		HGU-84/P					Thermo-plastic liner (TPL)
42	Rotary		HGU-84/P					Thermo-plastic liner (TPL)
43	Fixed		HGU-55/P					
44	Fixed		HGU-55/P					
45	Fixed		HGU-33/P			Dual integrated with rigid housing	V-tec liner, chemical poured	
46	Rotary		HGU-84/P					
47	Fixed		HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	



<b>ID</b>	<b>Q 3.0 Rotary/Fixed Wing A/C</b>	<b>Q 3.1 Helmet type</b>	<b>Q 3.2a If visor SPH-3C</b>	<b>Q 3.2b Fitting system for SPH-3C</b>	<b>Q 3.3a If visor HGU-33/P</b>	<b>Q 3.3b Fitting system for HGU-33/P</b>	<b>Q 3.4 Fitting sys HGU-55/P</b>
48	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
49	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
50	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
51	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
52	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
53	Fixed	HGU-33/P					
54	Rotary	HGU-84/P					
55	Rotary	HGU-84/P					
56	Fixed	HGU-33/P			Dual integrated with rigid housing	V-tec liner, chemical poured	
57	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
58							
59							
60	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
61	Fixed	HGU-33/P			Dual integrated with rigid housing	V-tec liner, chemical poured	
62							
63	Rotary	HGU-84/P					
64	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			

<b>ID</b>	<b>Q 3.0 Rotary/Fixed Wing A/C</b>	<b>Q 3.1 Helmet type</b>	<b>Q 3.2a If visor SPH-3C</b>	<b>Q 3.2b Fitting system for SPH-3C</b>	<b>Q 3.3a If visor HGU-33/P</b>	<b>Q 3.3b Fitting system for HGU-33/P</b>	<b>Q 3.4 Fitting sys HGU-55/P</b>
65	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
66							
67	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
68	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
69	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
70	Fixed	HGU-33/P					
71	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
72	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
73	Rotary	HGU-84/P					
74	Fixed	HGU-33/P					
75	Rotary	HGU-84/P					
76	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)	Single integrated w/ rigid housing	Pad fit (basic system)	
77	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	V-tec liner, chemical poured			
78	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Thermo-plastic liner (TPL)			
79	Rotary	HGU-84/P					
80	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Adjustable sling suspension (basic system)			
81	Rotary	HGU-84/P					

<b>ID</b>	<b>Q 3.0 Rotary/Fixed Wing A/C</b>	<b>Q 3.1 Helmet type</b>	<b>Q 3.2a If visor SPH-3C</b>	<b>Q 3.2b Fitting system for SPH-3C</b>	<b>Q 3.3a If visor HGU-33/P</b>	<b>Q 3.3b Fitting system for HGU-33/P</b>	<b>Q 3.4 Fitting sys HGU-55/P</b>
82	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	Thermo-plastic liner (TPL)			
83	Rotary	HGU-84/P					
84	Fixed	HGU-68/P					
85							
86							
87	Fixed	HGU-33/P			Single integrated w/ rigid housing	V-tec liner, chemical poured	
88							
89	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
90	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
91	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
92	Rotary	HGU-84/P					
93	Fixed	HGU-33/P			Single integrated w/ rigid housing	Pad fit (basic system)	
94	Rotary	SPH-3C & HGU-64/P	Single w/ NVG mount	Adjustable sling suspension (basic system)			
95	Fixed	HGU-33/P			Dual integrated with rigid housing	Pad fit (basic system)	
96	Rotary	SPH-3C & HGU-64/P					
97	Fixed	HGU-33/P					
98	Rotary	SPH-3C & HGU-64/P	Dual integrated (basic visor system)	V-tec liner, chemical poured			

ID	Q 3.0		Q 3.1		Q 3.2a		Q 3.2b		Q 3.3a		Q 3.3b		Q 3.4	
	Rotary/Fixed	Wing A/C	Helmet type		If visor	SPH-3C	Fitting system	for SPH-3C	If visor	HGU-33/P	Fitting system	for HGU-33/P	Fitting sys	HGU-55/P
99	Fixed		HGU-33/P						Single integrated		Pad fit (basic system)			
100									w/ rigid housing					
101	Rotary		HGU-84/P											

## Amelia - Phase I (Ancillary Equipment Section)

Q 4.1.1 - 4.1.2		Q 4.1.1 - 4.1.2		Q 4.2.1		Q 4.2.2		Q 4.2.3		Q 4.3.1 - 4.3.2 Q 4.3.3	
Wear skull cap and why		Wear eyeglasses and type		Temple type		Discomfort from temple bayonet		Wear ear plugs and type		Problem w/ earplug use	
1	Yes	Protect hair, comfort, catches sweat, more sanitary, better seal for hearing protection.	Yes	Plastic covered Bayonet (standard aviator issue, clear, for night flying)	Straight	Yes	Squeeze -- headache. Only worn flying the ball at night. Modification probably not practical.	Yes	E.A.R. (yellow foam)	No	Foams work best.
2	No		No					No			
3	No		No					Yes	E.A.R. (yellow foam)	No	
4	No		No					Yes	E.A.R. (yellow foam)	No	
5	Yes	To keep hair in place.	No					No			
6	Yes	Keeps my hair out of my face.	No					Yes	E.A.R. (yellow foam)		
7	Yes	Because it is available; may absorb some sweat	Yes	Comfort Cables for bayonet	Complete Wrap	No	Yes - when wear straight bayonets therefore have the other type	Yes	E.A.R. (yellow foam)	Other	Itches
8	Yes	Keep hair contained, absorbs sweat, keeps hair from sticking to padding, comfort	No					Yes	E.A.R. (yellow foam)	No	
9	No		No					Yes	E.A.R. (yellow foam)	No	
10	No		Yes		Partial Wrap	Yes	Pressure points and poor earcup seals	Yes		Other	Putting the helmet on sometimes makes them loose.

Q 4.1.1 - 4.1.2

Q 4.2.1

Q 4.2.3

Q 4.3.1 - 4.3.2 Q 4.3.3

Q 4.1.1 - 4.1.2 ID	Wear skull cap and why	Wear eyeglasses and type	Temple type	Q Discomfort from temple bayonet	Wear ear plugs and type	Problem w/ earplug use
11	No	No			Yes E.A.R. (yellow foam)	Better hearing No
12	Yes Hearing protection and better helmet fit	No			No	
13	No	No			Yes E.A.R. (yellow foam)	No
14	Yes Keeps hair from tangling in the pads -- more comfortable.	Yes	Straight	Yes Pressure points behind the ear but no poor earcup earseal.	some E.A.R. (yellow foam)	EC-130's were so loud
15	Yes So if head sweats, it collects the sweat and can wash it	Yes	Straight	Yes Above the ears	Yes E.A.R. (yellow foam)	No
16	Yes Dirt and grease of helmet and sweat	No			some E.A.R. (yellow foam)	Yes Either too big and fall out or helmet ears has no seal because of it being too big
17	No	No			Yes E.A.R. (yellow foam)	No
18	No	No			Yes Triple flange	Yes Too long so cut down stem
19	No	No			Yes E.A.R. (yellow foam)	Other Frequently come out and have to be worked back in during flight.
20	No Use a Bandana instead	Yes	None	No	No	
21	Yes To keep hair from being pulled	Yes	straight/partial	Yes	E.A.R. (yellow foam)	No

Q 4.1.1 - 4.1.2 ID Wear skull cap and why	Q 4.1.1 - 4.1.2 Wear eyeglasses and type	Q 4.2.1 Temple type	Q Discomfort from temple bayonet	Q 4.2.3 Wear ear plugs and type	Q 4.3.1 - 4.3.2 Q 4.3.3 Problem w/ earplug use
22 No	No			Yes E.A.R. (yellow foam)	Yes Sometimes after a few hours the foam expands into the ear cup then presses back into my ear
23 No	No			No	
24	No			Yes E.A.R. (yellow foam)	No
25 No	No			No	
26 No	No			No	
27 Yes To keep hair from getting caught and for cleanliness especially when not using my own helmet.	Yes mostly contacts, glasses only in emergency	Straight	No	some E.A.R. (yellow foam)	Other Only hearing radios
28 No	No			Yes E.A.R. (yellow foam)	No
29 No	No			some E.A.R. (yellow foam)	
30 No	Yes	Straight	Yes Just in front of the ear.	No	
31 Yes To keep hair from being pulled out.	No			Yes E.A.R. (yellow foam)	Yes Itching
32 No	No			No	
33 Yes Keeps my hair out of my face, also without skull cap pulls hair and is not comfortable.	No			Yes E.A.R. (yellow foam)	Yes After a while they become irritating
34 No	No			No	

Q 4.1.1 - 4.1.2		Q 4.1.1 - 4.1.2	Q 4.2.1	Q	Q 4.2.3	Q 4.3.1 - 4.3.2	Q 4.3.3
ID	Wear skull cap and why	Wear eyeglasses and type	Temple type	Discomfort from temple bayonet	Wear ear plugs and type	Problem w/ earplug use	
35	Yes General comfort, keeps sweat away from helmet liner, also keeps hair in place and from being pulled on from helmet wear.	No			Yes E.A.R. (yellow foam)	No	
36	No	No			Yes E.A.R. (yellow foam)	No	
37	No	No			Yes E.A.R. (yellow foam)	No	
38	No	No			Yes E.A.R. (yellow foam)	No	
39							
40	Yes Keeps hair out of face, absorbs sweat, protects ear some what.	Sometimes	Straight	No	Yes E.A.R. (yellow foam)	No	
41	No	Yes	Straight	Yes On top the the ears when I pull off my helmet where the glasses have been digging into my head.	Yes E.A.R. (yellow foam)	Yes	They sometimes pop out in flight.
42	No	No		No	No		
43	No	Yes	Straight	No Get headaches only when I wear them, also the visor pushes them into my nose.	Yes E.A.R. (yellow foam)	No	
44	No	Yes	Straight	Yes Hot spots on both side and indentations in	Yes E.A.R. (yellow foam)	No	
45	Yes It is easier on hair, doesn't pull or tear.	No			Yes E.A.R. (yellow foam)	No	
46	No	No			Yes E.A.R. (yellow foam)	No	



Q 4.1.1 - 4.1.2 ID	Q 4.1.1 - 4.1.2 Wear skull cap and why	Q 4.1.1 - 4.1.2 Wear eyeglasses and type	Q 4.2.1 Temple type	Q 4.2.1 Discomfort from temple bayonet	Q 4.2.3 Wear ear plugs and type	Q 4.3.1 - 4.3.2 Q 4.3.3 Problem w/ earplug use
47	No	Yes	Straight	No	Yes E.A.R. (yellow foam)	No
48	No	Yes	Straight	Yes It is just mostly uncomfortable.	No	
49	No	Yes	Straight	No	Yes E.A.R. (yellow foam)	No
50	No	No			Yes E.A.R. (yellow foam)	No
51	No	No			Yes customfitted	No
52	No	No			Yes E.A.R. (yellow foam)	No
53	Yes To contain hair.	Yes	Straight	No	Yes E.A.R. (yellow foam)	No
54	some Only if I remember to bring it.	No			Yes E.A.R. (yellow foam)	No
55	No	No			No	
56	No	No			No	
57	No	No			No	
58						
59		Yes	Partial Wrap			
60	No	No			Yes E.A.R. (yellow foam)	Other
61	Yes To collect the sweat and keep my hair out of my eyes around face.	No			No	Some time they fall out when I put my helmet on.
62		No				

Q 4.1.1 - 4.1.2 ID Wear skull cap and why	Q 4.1.1 - 4.1.2 Wear eyeglasses and type	Q 4.2.1 Temple type	Q 4.2.1 Discomfort from temple bayonet	Q 4.2.3 Wear ear plugs and type	Q 4.3.1 - 4.3.2 Q 4.3.3 Problem w/ earplug use
63 No	No			Yes E.A.R. (yellow foam)	Yes They fall out when you sweat.
64	No			No	
65 No	Yes	Partial Wrap	Yes	Yes E.A.R. (yellow foam)	Yes
66	No			some E.A.R. (yellow foam)	No
67 Yes To keep my hair out of my eyes, to keep my head cooler and helmet cleaner.	No			some E.A.R. (yellow foam)	No
68 Yes Less friction.	No			No	
69 No	Yes	Straight/Partial wrap	No	Yes E.A.R. (yellow foam)	No
70 No	Sometimes I wear contacts or glasses.	Partial Wrap	No	Yes E.A.R. (yellow foam)	No
71 No	No			Yes E.A.R. (yellow foam)	No
72 No	No			No	
73 some More comfortable, protects skin from plastic but makes helmet too tight.	No			Yes E.A.R. (yellow foam)	Other They do not always stay in well.
74 No	No				
75 No	No			Yes E.A.R. (yellow foam)	Other They pop out when I sweat and turn my head.
76 No	Yes	Straight	Yes Along side of head near ears.	No	

Q 4.1.1 - 4.1.2 ID	Q 4.1.1 - 4.1.2 Wear skull cap and why	Q 4.1.1 - 4.1.2 Wear eyeglasses and type	Q 4.2.1 Temple type	Q Discomfort from temple bayonet	Q 4.2.3 Wear ear plugs and type	Q 4.3.1 - 4.3.2 Q 4.3.3 Problem w/ earplug use
77	Yes So hair does not get pulled and so the helmet slides on more easily	No			Yes E.A.R. (yellow foam)	No
78	No	Sometimes Depends on brightness of the day, nonprescription sunglasses.	Straight	Yes Side of my skull just above the ear	Yes E.A.R. (yellow foam)	Other They try to pop out.
79	No	No			Yes E.A.R. (yellow foam)	No
80	No	No			Yes E.A.R. (yellow foam)	No
81	No	No			some E.A.R. (yellow foam)	Yes
82	No The velcro on the neck harness tears my hair out.	Yes	Straight	Yes I don't hear and get hot spots.	Yes E.A.R. (yellow foam)	Other They sometimes come out in flight.
83	some Keeps hair out of my face and ears	No			Yes E.A.R. (yellow foam)	Other They do not stay in very well
84	No	No			No	
85						
86						



Q 4.1.1 - 4.1.2		Q 4.1.1 - 4.1.2	Q 4.2.1	Q 4.2.3	Q 4.3.1 - 4.3.2 Q 4.3.3
ID	Wear skull cap and why	Wear eyeglasses and type	Temple type	Discomfort from temple bayonet	Wear ear plugs and type
96	Yes To absorb sweat and to keep hair flat and back.	No			
97	No	No			
98	Yes Sanitation reasons. I can wash the cap but I can not wash the form fit.	Yes	Complete Wrap	Yes From glasses near temples. After about 2 hours.	No
99	No	Yes	Straight	No	No
100		Yes	Straight	No Have not worn with helmet.	E.A.R. (yellow foam)
101	No	No		Yes	E.A.R. (yellow foam)
					Other Do not hear as well.
101					

# AMELIA - Phase I (Ancillary Equipment Section cont.)

Q 4.4.4		Q 4.4.2	Q 4.5.1 - 4.5.2		Q 4.5.3 - 4.5.4	
ID	CBR mask used and flight hours	Problems w/ CBR mask	Oxygen mask used and type	Mask size and problems		
1			Sometimes MBU-12/P	Medium	No	It's fine -- it hurts after a long time, but it's wearable
2	None		Yes	Short	Leakage	a bit around the bridge of nose sometimes, but worked fine for 2 years
3	None		No			
4			No			
5			Yes MBU-12/P	Short	No	With the new helmet, no problems with mask fit
6	None		Yes MBU-12/P	Medium		
7	None		Yes MBU-12/P	Short		
8	None		Sometimes MBU-12/P	Medium	Fit Problems	Comfort level is a matter of use: i.e., the less used to wearing it, the more uncomfortable it is. In flying T-2s, wore it constantly and fit more comfortably. If at all, occasionally too snug under eyes and over bridge of nose
9			No			
10			Yes	Medium	No	
11			No			
12			No			
13			No			
14	AR-5	25	Yes	Just on drills	Short	Leakage
			Sometimes			Around nose and occasionally around cheeks.
15			No			
16			No			
17			No			

**Q 4.5.3 - 4.5.4**  
Mask size and problems

**Q 4.5.1 - 4.5.2**  
Oxygen mask used and type

**Q 4.4.4**  
CBR mask used  
and flight hours

**Q 4.4.2**  
Problems w/ CBR  
mask

ID	Q 4.4.4 CBR mask used and flight hours	Q 4.4.2 Problems w/ CBR mask	Q 4.5.1 - 4.5.2 Oxygen mask used and type	Q 4.5.3 - 4.5.4 Mask size and problems
18			No	
19	None		No	
20	None		No	
21				
22	None		No	
23	None		Sometimes MBU-12/P if above 10,000 feet	No
24	None		No	
25	None		Yes MBU-12/P	Leakage
26	None		Sometimes MBU-12/P	No
			Some flights above 10,000 feet requiring mask. Not frequent.	
27	None		No	
28	None		No	
29	None		Sometimes MBU-12/P	Fit Problems To big for face.
30	None		Sometimes MBU-12/P	No
			Take off, landing, when above 10,000 feet, and emergencies.	
31	None		Yes MBU-12/P	Leakage
32	AR-5		Yes MBU-12/P	Yes Around the nose
			Depending upon cabin pressure or any emergencies	
33	AR-5	Not during flight.	No	
34	None		No	
35	None		No	
36	None		Yes MBU-12/P	No
37	None		Yes MBU-12/P	No

Q 4.4.4 ID	Q 4.4.2 CBR mask used and flight hours	Q 4.5.1 - 4.5.2 Problems w/ CBR mask	Q 4.5.1 - 4.5.2 Oxygen mask used and type	Q 4.5.3 - 4.5.4 Mask size and problems
38	None	No	No	Fit Problems Pulls to close to the face under jaw causing it to bite
39				
40	None	Sometimes	Sometimes MBU-12/P	
41	None	Not any more because now a helo pilot.		
42	None	No		
43		Sometimes	When required for certain operations, i.e. in-flight refueling.	No
44		Sometimes	Only on high alt flights or carrier launch and landing.	No
45		No		
46		No		
47	None	No		
48		Yes		
49	None	No		
50	None	No		
51	None	Sometimes	During simulated emergencies	No
52	None	Yes	MBU-12/P	No
53	None	No		
54	None	No		
55	None	No		
56	None	Sometimes	Above 10,000 feet	Leakage
57	None	Yes	MBU-5/P	Leakage In upper nose to eyes area.



ID	Q 4.4.4		Q 4.4.2		Q 4.5.1 - 4.5.2		Q 4.5.3 - 4.5.4	
	CBR mask used and flight hours	Problems w/ CBR mask	Oxygen mask used and type	Mask size and problems				
58								
59								
60	None		Sometimes MBU-12/P	When at altitude	No			
61			No		Leakage			I used to, it leaked
62			No					
63	None		MBU-12/P		Leakage			
64			Sometimes MBU-12/P	Depends on altitude and mission.	No			
65								
66	None							
67	None		Sometimes MBU-5/P	Above 10,000 feet	No			
68	None		Sometimes MBU-12/P	Above 10,000 feet	No			
69	None		Sometimes MBU-12/P	Above 10,000 feet.	Fit Problems			Mask above cheekbones is hard to adjust.
70	None		Sometimes MBU-12/P		No			
71	AR-5	3	Yes MBU-5/P		No			
72	None		Sometimes MBU-12/P	During emergencies, above 10,000 feet.	Fit Problems			across the bridge of the nose
73	None		No					
74		0	No Full face smoke mask					
75	None		No					
76			Sometimes MBU-12/P	Above 10,000 feet	Pressure Points			Mask hangs down on nose and causes a lot of pressure.
77	None		No					
78	None		No					

ID	Q 4.4.4 CBR mask used and flight hours	Q 4.4.2 Problems w/ CBR mask	Q 4.5.1 - 4.5.2 Oxygen mask used and type	Q 4.5.3 - 4.5.4 Mask size and problems
79	None		No	
80	None		No	
81	None		No	
82	None		No	
83	None		No	
84	None		Sometimes MBU-12/P	No
			Depends on altitude and the different maneuvers.	
85				
86				
87	None		Yes MBU-12/P	No
88				
89	None		No	
90	None		Sometimes MBU-12/P	Leakage
			only above 10,000	
91	None		Sometimes MBU-12/P	No
			Above 10,000 feet.	
92	None		No	
93	None		Sometimes MBU-12/P	No
			During a fire or on night flights	
94	None		No	
95	None		Yes MBU-12/P	Fit Problems
				Fits poorly over nose, causes discomfort within 10 min on bridge of nose. Leaks between nose and cheeks blowing air into eyes with my head turned in certain directions.
96			No	
97			Sometimes Full face smoke mask	During smoke drills. No

ID	Q 4.4.4 CBR mask used and flight hours	Q 4.4.2 Problems w/ CBR mask	Q 4.5.1 - 4.5.2 Oxygen mask used and type	Q 4.5.3 - 4.5.4 Mask size and problems
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98	None		No	
99	None		No	
100	None			
101	None		No	

101

## AMELIA - Phase I (Ancillary Equipment Section cont.)

Q 4.6.1 - 4.6.2		Q 4.6.3 - 4.6.4	Q 4.6.5	Q 4.6.6	Q 4.7.1	Q 4.7.2a	Q 4.7.2a	Q 4.7.2a
ID	Use NVGs, type and flight hours	Use counterweight and type	Weight amount	Helmet instability	Fitting system type	Pressure points	On left side	On right side
1	No				Foam pads	Yes	Crown	
2	No				Foam pads	Yes	Forehead	
3	No				V-tec (poured)	Yes	Forehead	Forehead
4	No				TPL (pre-fit, bubble wrap type)	Yes	Forehead	Forehead
5	No				TPL (pre-fit, bubble wrap type)	No		
6	No				Foam pads	Yes	Crown and further back	Crown and further back
7	No				V-tec (poured)			
8	No				Foam pads	Yes		Side Ear
9	No				Adjustable sling	Yes	Back, Crown, between, & side ear	Back, Crown, between, & side ear
10	No				Foam pads	Yes	Crown & Back	Crown & Back
11	No				Foam pads			
12	No				V-tec (poured)			
13	No				V-tec (poured)	Yes	Forehead	Forehead
14	No				Foam pads	Yes	Forehead	Forehead
15	Yes AN/AVS-6	25 No Just Battery Pack		Yes	V-tec (unpoured)	Yes	Above Ears	Above Ears
16	No					Yes	Forehead & Ears	Forehead & Ears
17	No				TPL (pre-fit, bubble wrap type)	Yes	Front of Ear and chin	Front of Ear and chin
18	No				Foam pads			

Q 4.6.1 - 4.6.2		Q 4.6.3 - 4.6.4		Q 4.6.5	Q 4.6.6	Q 4.7.1	Q 4.7.2a	Q 4.7.2a	Q 4.7.2a
ID	Use NVGs, type and flight hours	Use counterweight and type	Sq. piece of steel, cut to fit under battery pack for goggles	Weight amount	Helmet instability	Fitting system type	Pressure points	On left side	On right side
19	No					TPL (pre-fit, bubble wrap type)	Yes	Below Ear	Below Ear
20	Yes	Not sure	30	Yes	Sq. piece of steel, cut to fit under battery pack for goggles	5-8 oz	Yes	Crown	Crown
21									
22	No					TPL (pre-fit, bubble wrap type)	Yes	Underneath ear lobe on side of neck	Underneath ear lobe on side of neck
23	No					Foam pads	Yes	The ear and on top of head	The ear, on top of the head
24	No					TPL (pre-fit, bubble wrap type)	Yes	Middle of forehead and side of head directly above the ear	Middle of forehead
25	No					Foam pads	No		
26	No					Foam pads	No		
27	No					Foam pads	No		
28	No					TPL (pre-fit, bubble wrap type)	No		
29	No					Foam pads	Yes	Top of head	Top of head
30	No					Foam pads	Yes	Forehead	
31	No					Foam pads	Yes	Forehead near crown and above the ear	Forehead near the crown
32	No					Foam pads	Yes	Top of forehead and back of head near the crown	Top of forehead and back along the
33	No					V-tec (poured)	Yes	Around the ears and on top of head	
34	No					TPL (pre-fit, bubble wrap type)	No		

ID	Q 4.6.1 - 4.6.2		Q 4.6.3 - 4.6.4		Q 4.6.5	Q 4.6.6	Q 4.7.1	Q 4.7.2a	Q 4.7.2a	Q 4.7.2a
	Use NVGs, type and flight hours		Use counterweight and type		Weight amount	Helmet instability				
35	No						TPL (pre-fit, bubble wrap type)	No		On right side
36	No						Foam pads	Yes		Crown above the ear and temple region
37	No						Foam pads	No		
38	No						TPL (heat fit, bubble wrap type)	Yes		Ears and across the forehead
39										
40	No						Foam pads	No		
41	No						TPL (pre-fit, bubble wrap type)	Yes		Above ear towards back of head
42							TPL (pre-fit, bubble wrap type)	No		
43	No						TPL (pre-fit, bubble wrap type)	No		
44	No						TPL (pre-fit, bubble wrap type)	Yes		Above the ear and top of head
45	No						V-tec (poured)	Yes		Forehead
46	Yes	AN/AVS-6	125	2 "D" cell batteries	10 oz	No	TPL (pre-fit, bubble wrap type)	No		
47	No						Foam pads	Yes		Along forehead
48										
49	No						Foam pads	No		
50	No						Foam pads	Yes		Top of head
51	No						Foam pads	No		
52	No						Foam pads	Yes		Top of head and base of skull behind ear

ID	Q 4.6.1 - 4.6.2		Q 4.6.3 - 4.6.4	Q 4.6.5	Q 4.6.6	Q 4.7.1	Q 4.7.2a	Q 4.7.2a	Q 4.7.2a
	Use NVGs, type and flight hours		Use counterweight and type	Weight amount	Helmet instability	Fitting system type	Pressure points	On left side	On right side
53	No					V-tec (poured)	No		
54	Yes	AN/AVS-6	20		Yes	TPL (pre-fit, bubble wrap type)	No		
55	Yes	AN/AVS-6				TPL (pre-fit, bubble wrap type)	Yes	Forehead and around the outside of ear	Forehead and around out side of the ear
56	No					V-tec (poured)	No		
57	No					V-tec (unpoured)	Yes	Top of head	Top of head
58									
59									
60	No					Foam pads	No		
61	No					V-tec (poured)	Yes	Top of head along the front and back, also above the ear	Top of head front and back, also above the ears
62									
63	No					TPL (pre-fit, bubble wrap type)	Yes		Around the ear
64									
65	No					Foam pads	Yes	Behind ear	
66									
67	No					Foam pads	No		
68	No					Foam pads	Yes	Top of head near the back	
69	No					Foam pads	No		
70	No					Foam pads	No		

ID	Q 4.6.1 - 4.6.2		Q 4.6.3 - 4.6.4		Q 4.6.5		Q 4.6.6		Q 4.7.1		Q 4.7.2a		Q 4.7.2a		Q 4.7.2a	
	Use NVGs, type and flight hours		Use counterweight and type		Weight amount		Helmet instability		Fitting system type		Pressure points		On left side		On right side	
71	No								Foam pads		Yes		Top and rear of head, also above the ear		Top and rear of head, also above the ear	
72	No								Foam pads		No					
73	No								TPL (pre-fit, bubble wrap type)		Yes		Forehead and underneath the earlobe		Forehead and underneath the earlobe	
74									Foam pads		Yes		Back of head			
75	Yes	AN/AVS-6									No					
76	No								TPL (pre-fit, bubble wrap type)		Yes		Forehead		Forehead	
77	No								V-tec (poured)		No					
78	No								TPL (pre-fit, bubble wrap type)		Yes		Forehead		Forehead	
79	Yes								TPL (pre-fit, bubble wrap type)		Yes		Forehead		Forehead	
80	Yes								Foam pads		No					
81	No								TPL (pre-fit, bubble wrap type)		No					
82	No								TPL (pre-fit, bubble wrap type)		Yes		Forehead		Forehead	
83	No								TPL (pre-fit, bubble wrap type)		Yes		Side of head above the ears		Side of head above the ears	
84	No								TPL (pre-fit, bubble wrap type)		Yes		Above the ear		Above the ear	
85																
86																
87	No								V-tec (poured)		No					



ID	Q 4.6.1 - 4.6.2		Q 4.6.3 - 4.6.4		Q 4.6.5	Q 4.6.6	Q 4.7.1	Q 4.7.2a	Q 4.7.2a	Q 4.7.2a
	Use NVGs, type and flight hours		Use counterweight and type	Weight amount	Helmet instability	Fitting system type	Pressure points	On left side	On right side	
88										
89	No					Foam pads	Yes	Back of the head		
90	No					Foam pads	Yes	Ear lobe	Ear lobe	
91	No					Foam pads	No			
92	No					TPL (heat fit, bubble wrap type)	Yes	above ear	above ear	
93	No					Foam pads	Yes	Top of head in the rear	Top of head in the rear	
94	No					Foam pads	No			
95	No					Foam pads	Yes	Along forehead	Along forehead	
96						Foam pads	Yes		Back of head and across forehead	
97						Foam pads	No			
98	No					V-tec (poured)	Yes	above the ear, around the eyes where glasses touch, and behind ear at base of skull	Above the ear	
99	No					Foam pads	No			
100	No									
101	No					TPL (pre-fit, bubble wrap type)	Yes	Top of head and behind ear	Top of head and behind ear	

# AMELIA - Phase I (Ancillary Equipment Section cont.)

Q 7.7.2b		Q 7.7.2c	Q 7.7.2d
ID	Poor stability (yaw, pitch, roll)	Thermal	Overall poor fit of the fitting system
1			Hot Spots
2	Roll	During high workload periods	Too wide
3	Pitch	In hot environments	Too wide, Too loose
4		In hot environments	
5			Too loose
6		Always	Too tight, Difficult to fit, Other
7		In hot environments	
8	Roll	During high workload periods	Too wide, Not adjustable enough, Other
9	ALL	During high workload periods	Too wide, Too long, Too loose, Not adjustable enough
10			Difficult to fit, difficult to adjust
11		During high workload periods	Fits pretty good
12	Pitch	Never	Too wide, Too long, Too loose, Not adjustable enough, Other
13		Always	Too narrow, Too wide, Too long, Too tight, Not adjustable enough, Difficult to fit, difficult to adjust
14		In hot environments	Too loose, Other
15	Pitch and yaw	During high workload periods	
16	ALL		
17	Yaw	In hot environments	Too loose
18		In hot environments	Too long
19		Hot environments	Ear cups difficult to adjust rides high on forehead
20	ALL	During high workload periods	Too wide, difficult to adjust

Q 7.7.2b		Q 7.7.2c	Q 7.7.2d
ID	Poor stability (yaw, pitch, roll)	Thermal	Overall poor fit of the fitting system
21		During high workload periods	Other
22		During high workload periods	Not adjustable enough, Other
23	Pitch	In hot environments, on long flights	Difficult to fit, Other, Stop tight on neck and strap bends under the back.
24	Roll	In hot environments	Other, Cuts into my throat when I try to tighten the chin strap.
25		During high workload periods, In hot environments	Too narrow, Too short, Too tight, Difficult to adjust
26		Always	Too long, Too tight, Not adjustable enough, Difficult to fit, Difficult to adjust
27		During high workload periods, In hot environments	Too long, Too tight, Not adjustable enough, Difficult to fit, Difficult to adjust
28		During high workload periods, In hot environments	Too long, Too tight, Not adjustable enough, Difficult to fit, Difficult to adjust
29	ALL	During high workload periods, In hot environments	Not adjustable enough
30	Yaw	Always	Too wide, Too tight, Not adjustable enough
31	ALL	Always	Too tight, Not adjustable enough
32	Pitch	Always	
33		Never	
34	Pitch	During high workload periods, In hot environments	Too tight, Difficult to adjust, Other, Heaviness, neck sore after a long flight.
35		In hot environments	Not adjustable enough
36		During high workload periods	Difficult to adjust
37	Roll	Never	Too long, Not adjustable enough, Difficult to adjust
38		In hot environments	
39			
40		Other, after long periods of time	Other, have a good fit
41		Other, late in flight	
42		In hot environments	
43		Never	

Q 7.7.2b		Q 7.7.2c		Q 7.7.2d	
ID	Poor stability (yaw, pitch, roll)	Thermal		Overall poor fit of the fitting system	
44	Pitch	In hot environments		Too wide	
45		During high workload periods, In hot environments			
46		In hot environments		Not adjustable enough	
47		In hot environments			
48					
49		During high workload periods			
50	ALL	During high workload periods, In hot environments		Too tight, Not adjustable enough, H	
51					
52	ALL	Always		Difficult to fit	
53		Never		Other, stay to high on head	
54	Yaw, Roll	In hot environments		Too wide, Too tight, Other, chinstrap tightened properly, chokes me	
55	ALL	Always		Too tight	
56		Always			
57	ALL			Too wide, Too long, Too tight	
58					
59					
60		Never			
61	Pitch	During high workload periods, In hot environments		Not adjustable enough	
62					
63		Never			
64					
65	Pitch	In hot environments		Not adjustable enough	
66					

Q 7.7.2b		Q 7.7.2c	Q 7.7.2d
ID	Poor stability (yaw, pitch, roll)	Thermal	Overall poor fit of the fitting system
67		In hot environments	
68		In hot environments	
69		In hot environments	
70	Pitch	Never	Too tight, Not adjustable enough
71		In hot environments	
72	Yaw	In hot environments	Difficult to adjust
73		During high workload periods, In hot environments	Too short, Other, The cover on the liner does not stay in place.
74		In hot environments	Other - Tight in back of neck
75	Pitch	In hot environments	Too wide
76		In hot environments	Not adjustable enough, Difficult to fit, Difficult to adjust
77		In hot environments	Difficult to adjust
78	Pitch, Yaw	During high workload periods	Difficult to fit
79			
80	Pitch	Always	Too tight
81	Pitch	During high workload periods	
82	Pitch	In hot environments	Not adjustable enough
83	Pitch	Other	Too tight, Not adjustable enough, Difficult to fit, Difficult to adjust
84		In hot environments	Difficult to adjust
85			
86			
87			
88			
89	ALL	During high workload periods, In hot environments	Too tight, Not adjustable enough, Difficult to fit

Q 7.7.2b	Q 7.7.2c	Q 7.7.2d
ID Poor stability (yaw, pitch, roll)	Thermal	Overall poor fit of the fitting system
90	Pitch In hot environments	Too wide, Too tight, Not adjustable enough
91	Never	Too tight
92	In hot environments	
93	Pitch In hot environments	Too wide, Not adjustable enough
94	Pitch	
95	In hot environments	
96	Pitch During high workload periods	Too narrow, Too wide, Too tight, Not adjustable enough, Difficult to adjust
97	In hot environments	Too tight, Not adjustable enough
98	Pitch In hot environments	Too wide, Too long, Not adjustable enough, Difficult to adjust
99	In hot environments	Too wide
100		
101	Pitch In hot environments	

# AMELIA - Phase I (Hair Styles Section)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat-treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color Perm Straighten Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
1	short	blond					1		straight (short hair)
2	medium	auburn			2	NONE	2		Pony tail low at nape of neck
3	medium	light brown			4	NONE	4		straight, inside the flight suit collar (long hair)
4	medium	light brown			4	No difference b/c usually put up in a braid	2 or 3		French braid
5	extra long	dark brown			12	None	12		French braid
6	medium	blond					2		straight (short hair)
7	medium	light brown					4 or 5		straight (short hair)
8	short	blond					1.5		straight (short hair)
9	long	blond					2		straight, inside the flight suit collar (long hair)
10	extra long	blond			4	None	4		French braid
11	long	brown			12	NONE	2 or 3		pinned up
12	long	blond			6	None	3		pony tail

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color Perm Straighten Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
13	extra long	dark brown					2		straight, inside the flight suit collar (long hair)
14	long	blond			3	None	2		Braid and Fr. Braid
15	extra long	blond/light brown					6		braided
16	medium	dark brown			6	Hair thicker	6		braided, French braid, straight (short hair), up in a bun, pony tail
42 17	long	brown			12	None	4		French braid, inside the flight suit collar (long hair)
18	medium	brown			6	None	2		French braid
19	medium	brown					1.5		pony tail or straight
20	extra long	red			12	With perm helmet is tighter (hair is thicker) wear helmet in French braid. Without perm I wear helmet with barrette holding hair up on head			French braid, pinned up
21	extra long	auburn/light brown		none	12 12		2		french braid
22	medium	blond	straight	curling iron	24		2	None	straight (short)
23	medium	blond	straight	blow dry/curling	6		4		straight (short)



ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color Perm Straighten Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
24	long	light brown	straight	blow dry	1		3	None	straight, inside the flight suit collar (long hair)
25	short	blond	straight	blow dry/curling			2		straight (short hair)
26	medium	light brown	straight	blow dry	4		2		straight (short hair)
27	short	light brown	straight	blow dry/curling		bleaches	7	Had to cut off hair due to comfort; pins, heat etc.	straight (short hair)
28	long	light brown	straight	blow dry	3		2		pony tail
29	extra long	blond	straight	blow dry/curling	1		6	Bulkier when hair is up.	braided
30	short	light brown	wavy	none	3		1	Tight when hair is long straight (short hair)	straight (short hair)
31	short	brown	wavy	none			2	How tight it feels at the top of the helmet.	straight (short hair)
32	long	brown	curly	none	12		8	None	french braid
33	medium	light brown	straight	blow dry			3	None	straight, inside the flight suit collar (long hair)
34	short	light brown	straight	blow dry/curling	6		7	None	straight, inside the flight suit collar (long hair)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color Perm Straighten Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
35	medium	light brown	straight	blow dry/curling			2	Usually tighter when hair is longer causing some hot spots and discomfort.	french braid/Straight inside collar
36	extra long	brown	wavy	none			3		french braid
37	medium	blond	curly	blow dry	1				straight (short hair)
38	short	blond	straight	none			2	None	straight (short hair)
39	short	blond	straight	none			2	None	straight (short hair)
40	long	light brown	wavy	blow dry			2	None	french braid
41	short	red	curly	blow dry			1.5	When longer bangs were pushed down in eyes.	straight (short hair)
42	short	brown	wavy	blow dry			4	None	straight (short hair)
43	long	light brown	straight	blow dry	3		3	None	pony tail
44	extra long	blond	straight	blow dry			3	None	braided, inside the flight suit collar
45	extra long	blond/light brown	straight	none			1.5	None	french braid
46	short	light brown	curly	blow dry	6		2	None	straight (short hair)
47	medium	light brown	straight	none	3		1.5		straight (short hair)
48	short	light brown	straight	blow dry	9		3		straight (short hair)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color Perm Straighten Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
49	short	brown	straight	blow dry			1		straight (short hair)
50	medium	blond	wavy	blow dry			2	None	straight (short hair)
51	medium	auburn	wavy	blow dry	6		6	None	pony tail
52	medium	auburn		none	4		3	None	
53	medium	brown	straight	none	3		1	None	straight (short hair)
54	extra long	brown	straight	blow dry			2	When hair is long it gets into my eyes	french braid
55	long	light brown	straight	none			3	None	french braid
56	medium	brown	wavy	blow dry			2	None	straight (short hair)
57	extra long	light brown	straight				6	None	french braid/inside flight suit collar
58	short	brown	wavy	none	6		2		
59	extra long	red	curly	none	5		4		french braid
60	medium	blond	wavy	none			2	None	straight (short hair)
61	long	light brown	straight	blow dry			6	None	pony tail
62	extra long	light brown	wavy		18				french braid
63	medium	dark brown	wavy	none			1	None	up in a bun
64	short	light brown	straight	blow dry			1	None	straight (short hair)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color Perm Straighten Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
65	short	brown	straight	blow dry	6		1.5	None	straight (short hair)
66	short	brown	wavy	blow dry	4		2		pinned up
67	short	auburn	wavy	blow dry			2	None	straight (short hair)
68	long	light brown	wavy	curling iron			4	Better after haircuts.	straight, inside the flight suit collar (long hair)
69	medium	red	straight	blow dry/curling			5	None	straight (short hair)
70	medium	blond	wavy	blow dry			3	None	french braid
46 71	short	brown	straight	blow dry/curling			1	None	straight (short hair)
72	short	brown	wavy	blow dry			1.5		straight (short hair)
73	medium	blond	straight	none	18 6		1.5		straight (short hair)
74			wavy	blow dry	12				
75	extra long	red/light brown	straight	none			3	None	pony tail pinned up
76	short	light brown	wavy	blow dry	6		2	None	straight (short hair)
77	long	red	wavy	none			6	None	french braid
78	medium	light brown	wavy	none			4	More hair better fit.	pony tail
79	short	blond	straight	none			5	None	straight (short hair)

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color Perm Straighten Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
80	long	blond	straight	curling iron			6		french braid
81	short	auburn	straight	blow dry			1	Fits better after	straight (short hair)
82	extra long	blond	wavy	blow dry			4	None	braided
83	short	blond	straight	blow dry			1	None	straight (short hair)
84	long	red	wavy	hot curlers			.5	None	braided
85	extra long	light brown	straight	curling iron			2		
86									
87	long	dark brown	wavy	none			2	None	pinned up
88	long	blond	wavy	blow dry		High lights	6		
89	long	brown	straight	none			3	None	french braid
90	medium	light brown	straight	none			3	None	straight (short hair)
91	short	brown	curly	blow dry			1	None	straight (short hair)
92	short	light brown	straight	none			2	None	straight (short hair)
93	long	auburn	wavy	none	4		2	None	french braid
94	short	brown	straight	none			4	None	straight (short hair)
95	medium	brown	wavy	none			3	None	Other
96			straight	none					
97			straight	none					

ID	Q 5.1 Hair length	Q 5.2 Hair color	Q 5.3 Hair body	Q 5.4 Heat treat hair	Q 5.5 - 5.6 abcd How often chemically treat hair (mo.) Color Perm Straighten Other	Q 5.7 Changes in helmet comfort and performance after chemical treatments	Q 5.8 Frequency of hair cuts (mo.)	Q 5.9 Changes after haircuts	Q 5.10 Hair style under helmet
98	short	light brown	straight	blow dry			1		straight (short hair)
99	short	brown	wavy	blow dry	2		1.5		straight (short hair)
100	long	brown	wavy	none	2		1.5		french braid
101	medium	brown	wavy	blow dry			5	None	straight (short hair)

101

# AMELIA - Phase I (Hair Styles Section cont.)

## Q 5.11

Factors that influenced hair style under flight helmet

ID	Comfort	Appearance	Performance	Convenience	Instructed to Regulation	Directed to Recommendation	Sanitation	Opn Environment	Other
1	1	2	3	4			6	5	FOD Avoidance (bobby Pins, Barettes), Safety
2	1		1						
3	2			1					
4	4	5	2	3					
5		3							Keep it up rather than having to re-braid
6	1	2	5	3				4	Always been this way
7	3	1		4					
8	1	2		3					
9	1								
10		1		1					
11	2								
12	1								
13	1		3	2				4	
14	1	3		2					
15	1								
16									
17	1	1		1					
18	2	3	5	1				4	

Hair in Place

# Q 5.11

## Factors that influenced hair style under flight helmet

ID	Comfort	Appearance	Performance	Convenience	Instructed to Regulation	Directed to Recommendation	Sanitation	Opn Environment	Other
19	1			2					
20	1	5	1	1	6	6	6	1	
21	7	6	8	5	4	2	3	10	9
22	1		2	4					3
23	1	10	2	3	5	6	7	9	4
24	2		3	1					
25	2	4	3	1					
26	1			2		3			
27	2	3	4	1					
28	1			2					
29	1	2	3	4		5			
30	1		3	2					Down is a hazzard
31	1	3	2	4	7	1	7	6	5
32	1		1						
33	1		2	3					4
34	2			3			1		
35	1	1	1	1					1
36	4	2		3					1
37	1		1	1					
38	1	1		1					
39				2	6	3	1	4	5
40	2		3			1		7	



# Q 5.11

## Factors that influenced hair style under flight helmet

ID	Comfort	Appearance	Performance	Convenience	Instructed to Regulation	Directed to Recommendation	Sanitation	Opn Environment	Other
41	2	3		1					
42	2			1					
43	1	10	1	1	10	5	5		
44	1			1					
45	1	1		1					
46	1	3		2			5	4	
47	1	2		3					
48									
49	1								
50	1	2		2	1		2		
51	1								
52	2	3		1					
53	1	1		1	1				
54				2					Safety hazard
55	1	1			1				
56	1								
57	2					1			
58									
59	2				1				
60	1	1		1					
61	1	1		1					
62									

# Q 5.11

## Factors that influenced hair style under flight helmet

ID	Comfort	Appearance	Performance	Convenience	Instructed to Regulation	Directed to Recommendation	Sanitation	Opn Environment	Other
63	2	3	4	1	8	5	9	10	6
64	3	2	1	4					
65									
66	1	4		2					3
67	2		3	1					
68	1	4	2	3					
69	1	4	3	2					
70	1	3	4	2					
71	2	1		3					
72	2	3		1					4
73	1			2					
74									
75	1		4	5	2				
76	2	3	4	1					
77	1		3	2					
78	1		2	3					4
79	2	4	5	1	6				3
80	1		1		1				
81	5	3	4	1			2		
82	1	4	3	2					
83	3	2		4	1				
84	1		1					1	

Safety

# Q 5.11

## Factors that influenced hair style under flight helmet

ID	Comfort	Appearance	Performance	Convenience	Instructed to Regulation	Directed to	Recommendation	Sanitation	Opn Environment	Other
85										
86										
87	3	2								
88	5	3	6	1	2	8	10	9	4	
89	1	2			1		2	2		
90	3	1	4	2					5	
91	1			1						
92	1	3							2	
93	1	2			3					
94	1			2					2	
95	1									
96										
97										
98	1	4		2				5	3	
99	3	2		1					4	
100	2	3	8	1	4	10	5	7	6	
101	1	7	2	3			4	5	6	

## AMELIA - Phase I (Hair Styles Section cont.)

ID	Q 5.12		Q 5.13		Q 5.14	Q 5.15		Additional Comments
	Flt hours w/ current style	Change style for environmental conditions	Other hair styles tried	Problems encountered with other styles				
1	300	No			Braided, Straight (short hair)	Cannot wear a braid of any kind in a helmet. As long as hair is down, long or short, it didn't change the fit.		
2	300	No						
3	20	No			Straight (short)	NONE		
4	200	No			None			Pressure points -- This is a new helmet so still working with it.
5		No			Pony tail			a little too tight over ears
6	300	No			None			Helmet fits crooked -- visor comes down to side of my nose.
7	200	No	Haven't had to but would wear it shorter or permed if hair dryers and curling irons were not accessible		Straight (short)			If in difficult operation environment - cut shorter.
8	10	No			Straight, inside fit suit collar (long hair)	Tangling, hair getting in the way, discomfort under helmet since hair shifted around, discomfort due to having ponytail coming from out under helmet--would pull etc.		Not qualified yet (pilot)Fit: Not adjustable enough around Foam pads come loose and shift
9	150	No			Braided, French braid, Pinned p, Pony tail	Any where there is a hair restraining device or a hair mass protruding the helmet creates hot spots.		The helmet liner is very unforgiving. My helmet has play in all directions and still manages to create hot spots
10	1800	No						
11	1500	No			French braid, Up in a bun	Bun is impossible -- helmet hurts head, Fr Braid hurts the top of neck from tucking braid under.		Wear pinned up now but barrettes still dig into my head b/c of helmet. "I'm seriously considering cutting my hair short enough so it doesn't have to be pinned up because of discomfort. Although I've had long hair all my life."
12	300	No			Straight (short hair), Straight, inside fit suit collar (long hair)	Without ponytail, longhair can go all over the place and become uncomfortable		Helmet falls forward on head. Ear pieces not close enough.

ID	Q 5.12		Q 5.13		Q 5.14	Q 5.15	Additional Comments
	Flt hours w/ current style	Change style for environmental conditions	Other hair styles tried	Problems encountered with other styles			
13		No	French braid, Pinned up	Give hot spots	Helmet is very ill-fitted, too tight in spots, too loose in others. Hot Spots. Poor hearing protection  Fitting system - Uncomfortable	Fitting System overall fit: Side to side (too loose) if chin strap is tightened to alleviate this; pressure point under chin. "BETTER THAN ORIGINAL ROTARY WING HELMET!!"  Chin strap is too low           Poor stability while vert reping missions  Not very much info due to the fact that I am a student aviator.   I have alot of pressure on my ears.       T would like to be able to french braid my hair, but it is to hot and creates too much pressure on my head.	
14	1480	No	French braid				
15	600	No	French raid, Straight (short hair)	French Braid -- helmet too tight, hot spot in back. Short/Straight - irregular hot			
16	643	No	Twist/ Twist Braid	Depends on what month relater was put			
17	600	Yes	Most often wear it down, occasionally up				
18	100	No	French raid, Straight (short hair)	None--when received the new helmet started French braiding hair so was fitted for it.			
19	200	No	None				
20		No					
21	4	No		none			
22	70	Yes	hot-shorter, cold-longer				
23	90	No		none			
24	200	No	Short hair, Pinned up	To uncomfortable because it pulled on my hair.			
25	80	No					
26	130	Yes	I cut it short enough so that I wouldn't have to braid it every day or have the braid press on my head.	none			
27	8	No	Pinned up	Uncomfortable, pins, hairclip jabbed head. With hair down hot, sloppy, harassment.			
28	400	No	Short hair				
29	300	No	Braided	Makes the helmet tight.			

ID	Q 5.12		Q 5.13		Q 5.14		Q 5.15		Additional Comments
	Fit hours w/ current style	Change style for environmental conditions	Yes	Hot cut hair off	Other hair styles tried	Problems encountered with other styles			
30	15		Yes	Hot cut hair off					Good helmet overall. Hair never an issue unless I forget my skull cap and then it can get pulled or in the way.
31	8		Yes	Hot and humid, prefer short hair	Long hair inside collar		Hair to bulky under helmet		
32	13		No		none				
33	400		No		none				
34	350		No		Braided, Pinned up	Barrettes gave hot spots			
35	150		No		Short hair, Long hair inside collar				
36	2500		No		none	none			
37	85		Yes	When humid or wet pull hair back	none				
38	2400		No		none				
39			No		Pony tail	Uncomfortable		Why are we concerned with hair color?	
40			No		Short hair, Pinned up	Short hair was still too long to leave down, needed to be pinned up. The barrettes gave hot spots.		Only real problem was with the helmet strap. I never pulled it tight because it would cut off air when I put my head down to do V lists. This is unsafe because it could come off during ejection etc.	
41	300		No		none				
42	10		No		Fr braid, Up in a bun	In a bun made my head sore and the helmet uncomfortable.			
43	450		No		Long hair inside collar	Too hot on neck.			
44	350		No		Fr braid, Long hair inside collar	Pulling of hair if loose, any other hair style like french braid causes hot spots.			
45	150		No		none				
46	800		No		Fr braid, Long hair inside collar	Bad fit so I cut my hair off.			

Good helmet overall. Hair never an issue unless I forget my skull cap and then it can get pulled or in the way.

Why are we concerned with hair color?

Only real problem was with the helmet strap. I never pulled it tight because it would cut off air when I put my head down to do V lists. This is unsafe because it could come off during ejection etc.

ID	Q 5.12		Q 5.13		Q 5.14	Q 5.15	Additional Comments
	Fit hours w/ current style	Change style for environmental conditions	Yes	Cut shorter.	Other hair styles tried	Problems encountered with other styles	
47	100				Long hair inside collar	Inconvenient to put up and then take back down again.	
48	50	No			none		
49	200	No			none		
50	16	No			Braided, Up in a bun	Uncomfortable	
51	20	No					
52	286	No			Fr braid, Up in a bun, Pinned up	Hot spots at braid, bun, and at pin points.	
53	400	No			Other, short and permed	I got straight and flat in the helmet and looked awful.	
54	200	No			none		
55	600	No			Braided, Long hair inside collar		
56	1500	No			Braided	none	Women need a nomex sheath to cover their neck in case of fires in the cockpit. Flight suit collar worn up is not long enough. This is needed regardless of hair length.
57	160	No			Fr braid	Hotspots	
58							
59		Yes					
60		No			Short hair		
61	1500	No			Long hair inside collar	none	
62							
63	120	No			none		
64	2	No			Fr braid, Short hair	A braid changes the fit and causes pressure points	

ID	Q 5.12		Q 5.13		Q 5.14		Q 5.15		Additional Comments
	Flt hours w/ current style	Change style for environmental conditions		Other hair styles tried	Problems encountered with other styles				
65	500	No							Make short hair a NAVAIR regulation. It will eliminate most if not all female problems. A little personal sacrifice won't hurt for the privilege of flying.
66		Yes	I wear it of my face and neck if hotter, more humid weather	Short hair	Hair in your face, falling down , or coming loose, pressure on head where head gear come in contact with a barrette.				
67	30	No							
68	30	No		Long hair inside collar	Fly away, safety problem.				
69	30	No		Pinned up	Pressure from barrettes sometimes pop open during flight.				
70	3	No		Pony tail					Pressure at the ponytail origin, space between head, helmet around ponytail.
71	120	No		none					
72	50	No							
73	150	No		Fr braid, Short hair	Braids and barrettes cause bad hot spots				The new helmet visor is bad: loose straps, hard to get down, gets scratched easily not enough protection.
74		No		Fr braid, Pinned up	Discomfort in back of head				
75	400	No		Fr braid	Made helmet too tight.				
76	150	No		Fr braid	Put pressure on back of neck.				
77	20	No							French braid makes the helmet feel really tight unless I pull the end out and tuck it in my flight suit.
78	200	Yes	Hot shorter, cold longer.	Fr braid	Uncomfortable				I like the old well pocketed flight suit style. Not the new Airforce pocket on the sides of the hip style.
79	10	No		Long hair inside collar	Uncomfortable and restrictive. Braids and barrettes gave pressure points				
80	24	No		none					
81	2400	No		none					Helmet does not fit right if you have bow or barrette in your hair.



ID	Q 5.12	Q 5.13	Q 5.14	Q 5.15	Additional Comments
	Fit hours w/ current style	Change style for environmental conditions	Other hair styles tried	Problems encountered with other styles	
82	300	No	Fr braid, Short hair, Long hair inside collar, Up in a bun, Pinned up, Pony tail	Too bumpy, appearance after flight, to messy, bobby pins, bulky	Causes the helmet to tilt forward impairing my vision.
83	150	No	Pinned up	Hot spots and messy	
84		No	Up in a bun, Pinned up	The helmet did not fit correctly.	
85					I have not begun wearing a helmet yet and intend to wear it French braided.
86					
87	400	No	Short hair	none	I grew my hair out after a shore tour and came back to flying after 3 years. the helmet was initially hot in the forehead for 3 months but stretched to accommodate. Other wise I just would have to cut it again. I can't imagine asking to have a new helmet.
88		No	Braided, Short hair, Pinned up		
89	16	No	none		I think it would be more appropriate to give females a more sanitary and convenient urination facility or a flight suit zipper that extends about 6 inches farther, than concerning the Navy with things like your hair not fitting your helmet.
90	40	No	none		
91	100	No			
92	3	No	Fr braid, Pinned up, Pony tail	Maintaining these longer styles without wearing clips or pins, which would be a FOD hazard is practically impossible.	I have just gotten my new helmet and are working out the kinks. The weight and sound proofing are excellent.
93	3700	No	Up in a bun, Pinned up	If hair is not pinned up just right, helmet gives a serious headache.	I normally don't wear my helmet unless in an emergency
94	120	No			

ID	Q 5.12	Q 5.13	Q 5.14	Q 5.15	Additional Comments
	Fit hours w/ current style	Change style for environmental conditions	Other hair styles tried	Problems encountered with other styles	
95	1000	No	Braided, Short hair, Long hair inside collar, Up in a bun	Terrible hot spots, short hair looks like a boy, inside flight suit every time you turn your head hair gets caught	Don't understand why women are required to wear longer hair inside their flight suit. A guys mustache is not a fire hazard or exposed faces. If my hair caught on fire, my body is protected as is my neck by the flight suit. The helmet protects my head.
96		No	Long hair inside collar, Pony tail	A pony tail gave difficulty pulling the helmet back to get rid of the hot spot on my forehead. Straight hair the helmet will pull my hair if it moves.	Helmet are not the only problem. There are not enough small vests generated to accommodate women. If they do have one
97		No	Up in a bun, Pony tail	My hair is to long and it gets in the way in a pony tail. The bun hurts in a helmet, my hair gets ripped	Still waiting for better urine collection devices.
98	30	Yes	Fr braid	None, my braid was form fitted	Flight boots need arches inside. Little more Velcro on waist tabs for smaller waists
99	200	No	none		
100		Yes	When cold I wear it closer to my head and it straightens more.		
101	300	No			

### Reference

McEntire, B. J., Murphy, B. A., and Mozo, B. T. 1999. Female hairstyle and flight helmet accommodation: The AMELIA Project, Phase I: Survey Study, Part 1. Research report. Fort Rucker, AL: U.S. Army Aeromedical Research Laboratory. USAARL Report No. 99-

Appendix A.

Female aircrew helmet accommodation questionnaire.

FEMALE AIRCREW HELMET ACCOMMODATION  
QUESTIONNAIRE

INSTRUCTIONS: Please take your time to answer the following questions. All answers are completely voluntary and will be held in confidence. You may leave any question unanswered, but we encourage you to respond to all questions. The questions were generated with the intent of better understanding the effects between the various helmet configurations and female aircrew and to identify helmet deficiencies. The information to be gleaned from the questionnaire will help Navy ALSS engineers identify and better understand the helmet problems you are experiencing so that solutions may be attained. All responses will be held confidential.

DATE: \_\_\_\_\_

## 1. MILITARY EXPERIENCE

1.1 What is your MOS/Designator? \_\_\_\_\_

1.2 What is your rank?

Enlisted:            E1    E2    E3    E4    E5    E6    E7    E8    E9

Warrant:            W1    W2    W3    W4    W5

Officer:            O1    O2    O3    O4    O5    O6    O7    O8    O9

1.3 Date of rank? \_\_\_\_\_

1.4 Assigned squadron/unit? \_\_\_\_\_

1.5 Currently assigned aircraft? \_\_\_\_\_

1.6 Number of flight hours in this aircraft? \_\_\_\_\_

1.7 Total number of accumulated flight hours? \_\_\_\_\_

1.8 Normal aircrew position? \_\_\_\_\_

1.9 Normal mission duties:

a. Pilot in command

f. Crew chief

b. Copilot

g. Flight mechanic

c. Flight engineer

h. Test pilot

d. RIO

i. Instructor pilot

e. Sonar operator

j. Other (describe) \_\_\_\_\_

## 2. DEMOGRAPHIC

2.1 What is your age? \_\_\_\_\_

2.2 What is your race? (Please circle)

- a. Alaskan Native
- b. American Indian
- c. Asian or Pacific Islander
- d. Black, not of Hispanic origin
- e. Hispanic
- f. White, not of Hispanic origin
- g. Other (please specify): \_\_\_\_\_

### 3. HELMETS

3.1 What helmet configuration do you generally fly with? (Please circle)

#### ROTARY WING HELMETS

- a. SPH-3C & HGU-64/P series (basic rotary-wing helmet) – **Please go to question 3.2**  
Based on the traditional rotary wing helmet shell with large eardomes. Various visor assemblies And fitting systems are available in these configurations.
- b. HGU-67/P (new AH-1 helmet configuration) – **Please go to section 4.**  
Has a TACAIR helmet profile, an integrated chin/nape strap, polystyrene energy liner, pre-Formed thermoplastic liner (TPL™), tapered earcups, leather edgeroll, snap-on single visor, an HTS attachment, and a common mounting block for ANVIS and the helmet sighting reticle.
- c. HGU-84/P (new basic rotary wing helmet) – **Please go to section 4.**  
Identical to the HGU-67/P except without the HTS attachment block.

#### FIXED WING HELMETS

- a. HGU-33/P series (basic fixed wing/TACAIR helmet) – **Please go to question 3.3.**  
Basic fixed wing helmet with various mission and aircraft specific configurations..
- b. HGU-55/P (USAF fixed wing basic helmet) – **Please go to question 3.4.**  
Has a fiberglass shell, snap on single visor assembly, gray leather edgeroll, and either a pad Fitting system or a thermoplastic liner.
- c. HGU-66/P (Night attack helmet) – **Please go to section 4.**  
Similar to the basic HGU-55/P except the shell is pre-drilled to accommodate a CATS-EYES Night vision goggle mount and has an integrated chin and nape strap retention assembly.
- d. HGU-68/P (New TACAIR helmet) – **Please go to section 4.**  
Has a profile similar to the HGU-33/P and HGU-55/P series helmets. New features include a Graphite/nylon helmet shell, a low profile 600 knot single visor system, integrated chin and nape Strap retention harness, thermoplastic liner (TPL™) fitting system, leather covered earcups, and a Black leather edgeroll.
- e. HGU-85/P (night attack helmet) – **Please go to section 4.**  
Same features as the HGU-66/P except based on the HGU-68/P helmet shell and thermoplastic liner (TPL™) fitting system.



3.2 Please answer the following if your basic helmet is the SPH-3C or HGU-64/P

a. Which visor configuration is mounted on your helmet?

- i. Dual integrated (basic visor system)
- ii. Single with the Helmet Sight Assembly (used in the AH-1 aircraft)
- iii. Single with the Night Vision goggle mount (for SANVIS-6 NVGs)
- iv. Other (describe) \_\_\_\_\_

b. Which fitting system configuration is installed on your helmet?

- i. Adjustable sling suspension (basic system)
- ii. Leather covered custom liner, chemical poured (V-tec liner)
- iii. Leather covered custom liner, not chemical poured (V-tec liner)
- iv. Thermoplastic liner (TPL™), i.e., bubble wrap
- v. Other (describe) \_\_\_\_\_

3.3 Please answer the following questions if your basic helmet is based on the HGU-33/P series helmet.

a. Which visor configuration is mounted on your helmet?

- i. Dual integrated with rigid housing
- ii. Single integrated with rigid housing
- iii. Single snap-on visor with leather cover
- iv. Other (describe) \_\_\_\_\_

b. Which fitting system configuration is installed on your helmet?

- i. Pad fit (basic system)
- ii. Leather covered custom liner, chemical poured (V-tec liner)
- iii. Leather covered custom liner, not chemical poured (V-tec liner)
- iv. Thermoplastic liner (TPL™), i.e., bubble wrap
- v. Other (describe) \_\_\_\_\_

3.4 If your helmet is an HGU-55/P, which fitting system configuration is installed?

- i. Two-piece leather covered custom liner.
- ii. Thermoplastic liner (TPL™), i.e., bubble wrap
- iii. Other (describe) \_\_\_\_\_

#### 4. ANCILLARY EQUIPMENT

##### 4.1 SKULL CAPS

4.1.1 Do you wear a skull cap with the helmet? Yes No Sometimes (please explain)

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4.1.2 If you wear a skull cap, please explain why you do so? \_\_\_\_\_

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##### 4.2 EYEGLASSES

4.2.1 Do You wear eyeglasses (corrective lens or sunglasses) with the helmet?

Yes No Sometimes (If no, go to question 4.3. If sometimes, please explain.)

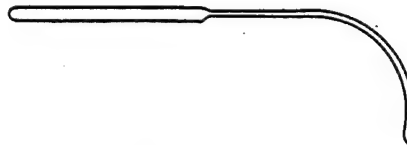
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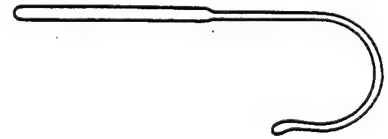
4.2.2 What type of temple bayonet do your eyeglasses have?



Straight



Partial wrap



complete wrap

4.2.3 Do you experience any discomfort, pressure points, or poor earcup earseal resulting from the eyeglasses temple bayonet? (Please explain) \_\_\_\_\_

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#### 4.3 EARPLUGS

4.3.1 Do you wear earplugs under your helmet? Yes No Sometimes (If no, please go to 4.4. If sometimes, please explain.) \_\_\_\_\_

\_\_\_\_\_

4.3.2 What type of earplug do you routinely use?

E.A.R. (yellow foam)

Triple flange

Moldable wax

Custom fitted

Other (please identify or describe) \_\_\_\_\_

4.3.3 Do you experience any pain, discomfort or any other problems from the use of earplugs? (Please explain) \_\_\_\_\_

\_\_\_\_\_

#### 4.4. CBR MASKS

4.4.4 Which chemical/biological protective mask have you used (please approximate the number of flight hours)?

AR-5 \_\_\_\_\_

Other (specify) \_\_\_\_\_

None (go to 4.5)

4.4.2 Did you have any fit problems or experience any pressure points, hot spots, or other discomfort with the CBR mask? (Please explain and describe) \_\_\_\_\_

\_\_\_\_\_

#### 4.5 OXYGEN MASKS

4.5.1 Do you wear an oxygen mask while performing flight duties?

Yes      No (if no, go to 4.6)      Sometimes (please explain) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4.5.2 Which oxygen mask do you normally use?

- a. MBU-5/P (Air Force custom made)
- b. MBU-12/P (USN/USMC/USAF standard issue)
- c. Other (Please identify or describe) \_\_\_\_\_  
\_\_\_\_\_

4.5.3 What size is your oxygen mask?

Short      Medium      Long      X-long

4.5.4 Do you have any fit problems, leakage, pressure points, or experience other discomfort with the oxygen mask? (Please explain or describe) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4.6 NVGs

4.6.1 Do you use night vision goggles (NVGs)? Yes No (If no, go to 4.7)

4.6.2 What type of NVGs have you used and approximately how many hours have you accumulated with them?

AN/AVS-6 \_\_\_\_\_ CatsEye \_\_\_\_\_ PNVS-5 \_\_\_\_\_ Other (list) \_\_\_\_\_

4.6.3 Do you use a counterweight with the NVGs? Yes No (:If no, go to 4.7)

4.6.4 What do you use as a counterweight? \_\_\_\_\_

4.6.5 Approximately how much does the counterweight weigh? \_\_\_\_\_ oz/lb/gm

4.6.6 Do you experience helmet instability when using the NVGs? Yes No

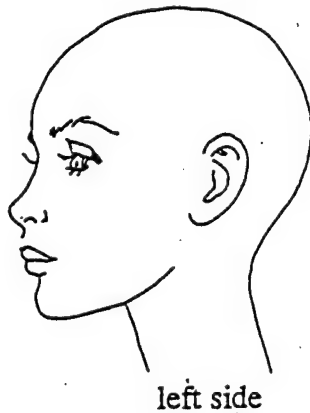
#### 4.7 HELMET FITTING SYSTEM

4.7.1 What type of fitting system does your helmet have?

- |                     |                                      |
|---------------------|--------------------------------------|
| a. V-tec (unpoured) | e. TPL™ (pre-fit, bubble wrap type)  |
| b. V-tec (poured)   | f. TPL™ (heat fit, bubble wrap type) |
| c. Foam pads        | g. Adjustable sling                  |

4.7.2 Which of the following do you experience with your helmet fitting system?

- a. Pressure points (hot spots)?      Yes      No      (If yes, please chart locations below)



- b. Poor stability resulting in helmet movement about the \_\_\_\_\_ axis (pitch, yaw, roll).
- c. Thermal discomfort (i.e., heat buildup)
- (1) Always
  - (2) Only during high workload periods
  - (3) Usually in hot environments (summer, tropical, etc.)
  - (4) Never
  - (5) Other (describe) \_\_\_\_\_
- d. Overall poor fit, i.e., the fitting system is (please circle all that apply):
- |                |                           |
|----------------|---------------------------|
| (1) Too narrow | (6) Too tight             |
| (2) Too wide   | (7) Not adjustable enough |
| (3) Too short  | (8) Difficult to fit      |
| (4) Too long   | (9) Difficult to adjust   |
| (5) Too loose  | (10) Other _____          |

## 5. HAIR STYLES

- 5.1 What is the general length of your hair? (Please circle or sketch your hair line, if not illustrated.)



a. short – off the neck



b. medium – top of the shoulders



c. long – over the shoulders



d. extra long – below the shoulder blades

- 5.2 Which of the following best describes your natural hair color? (Please circle)

- |           |                |               |
|-----------|----------------|---------------|
| a. auburn | d. blonde      | g. dark brown |
| b. red    | e. light brown | h. gray       |
| d. black  | f. brown       |               |

5.3 Which of the following best describes your natural hair body? (Please circle)



a. straight

b. wavy

c. curly

d. other (describe): \_\_\_\_\_

5.4 Do you routinely heat treat your hair? Yes No (If yes, please circle the method used most frequently)

a. blow dry

d. flat iron

b. hood hair dryer

e. hot curlers

c. curling iron

f. other (describe) \_\_\_\_\_

5.5 Do you chemically treat your hair with any of the following? Yes No (If no, go to 5.8) Please circle all that apply.

a. coloring

b. permanents

c. straighteners

d. other (describe): \_\_\_\_\_

5.6 Approximately how often do you chemically treat your hair with

a. coloring, every \_\_\_\_\_ months

b. permanents, every \_\_\_\_\_ months

c. straighteners, every \_\_\_\_\_ months

d. other, every \_\_\_\_\_ months



5.7 What differences in helmet comfort and performance do you notice between hair chemical treatments? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

5.8 Approximately how often do you cut your hair? Every \_\_\_\_\_ months.

5.9 What differences in helmet comfort and performance do you notice between hair cuts? \_\_\_\_\_  
\_\_\_\_\_

5.10 Which of the following best describes your hair style under your flight helmet? (Please circle)

- |  |                           |
|--|---------------------------|
| a. braided   | e. up in a bun            |
| b. french braid  | f. pinned up              |
| c.. straight (short hair)                              | g. pony tail              |
| d. straight, inside the flight suit collar (long hair) | h. other (describe) _____ |
- \_\_\_\_\_

5.11 What factors influenced your decision to use this hair style under your flight helmet? (Please rank all that apply in order of importance, 1 = highest importance, etc.)

- |       |   |
|-------|---|
| _____ | a. comfort                                  |
| _____ | b. appearance                               |
| _____ | c. helmet performance                       |
| _____ | d. convenience                              |
| _____ | e. instructed to do so                      |
| _____ | f. regulation                               |
| _____ | g. directed to do so                        |
| _____ | h. recommendation                           |
| _____ | i. sanitation                               |
| _____ | j. operational environment (hot/cold/humid) |
| _____ | k. other (describe): _____                  |

5.12 Approximately how many flight hours do you have with your current hair style? \_\_\_\_\_

5.13 Do you change your flight hair style for various environmental conditions (i.e., hot, cold, wet, humid, dry)?    Yes    No    (If yes, please describe changes) \_\_\_\_\_

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5.14 What other hair style(s) have you tried under your helmet? (Circle all that apply)

- |  |                            |
|--|----------------------------|
| a. braided   | e. up in a bun             |
| b. french braid                                    | f. pinned up               |
| c. straight (short hair)                           | g. pony tail               |
| d. straight, inside flight suit collar (long hair) | h. other (describe): _____ |

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5.15 What problems did you experience with these other hair styles? \_\_\_\_\_

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Please add any additional comments you would like to make regarding ALSS: \_\_\_\_\_

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